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Environmental Protection, Producer Insolvency and Lender Liability

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Environmental Protection, Producer Insolvency and Lender Liability*

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Résumé / Abstract

Nous traitons ici du cadre légal de la responsabilité directe des entreprises lors de désastres environnementaux et de l'extension de cette responsabilité aux prêteurs en cas de faillite de l'entreprise. De tels régimes existent ou sont à l'étude dans plusieurs pays. Le cas le plus connu est le *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) de 1980/85 aux États-Unis et nous analysons les principaux cas de jurisprudence auxquels cette loi a donné lieu depuis 15 ans.

The present paper deals with some legal issues surrounding environmental protection, namely those issues concerning the liability of the different firms and individuals directly or indirectly involved in the generation of environment damaging accidents. We consider in particular the potential effects of extending a firm's liability in case of an environmental disaster to its lenders and financiers when the cost of this liability is too large in relation to the firm's assets. Such extended liability regimes exist or are considered in many countries. The most important case is the 1980/85 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in the USA that led to an extensive jurisprudence over the last fifteen years.

Mots clés : Environnement, responsabilité, CERCLA

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1. INTRODUCTION.

Environmental protection is a major concern of modern societies and becoming every day more acute as pressures on the available resources keep on increasing. Also, governments have engaged in a program of downsizing to reduce public deficits and increase the accountability and responsibility of different organizational units such as firms, households, public service units, etc. Lots of effort are by now spent on finding new and more efficient ways to achieve social goals such as environmental protection. Incentive regulatory schemes and redesigned legal frameworks replace the traditional interventionist approach based on the empowerment of a large group of civil servants and public regulators. These public service employees become indirect actors working through modifications in the social, legal and regulatory context facing the basic organizational units of society. Many analysts consider that this indirect approach will be more efficient than the still dominant direct approach.

The present paper deals with some legal issues surrounding environmental protection, namely those issues concerning the liability of the different firms and individuals directly or indirectly involved in the generation of environment damaging accidents. We consider in particular the potential effects of extending a firm's liability in case of an environmental disaster to its lenders and financiers when the cost of this liability is too large in relation to the firm's assets. Such extended liability regimes exist or are considered in many countries. The most important case is the 1980/85 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in the USA that led to an extensive jurisprudence over the last fifteen years.

The paper is organized as follows. First, we review legal frameworks and some court cases. We briefly mention three Canadian court cases that typify the future and we report on some major US court cases whose influence is felt all over the developed world. We look at attempts by the American Environmental Protection Agency to clarify the notion of extended liability and design more rigorous tests to detect the involvement of related firms in the management of the liable firm. In the light of the above cases, we briefly discuss the 1993 European Community Green Paper on environmental protection and liability and the Council of Europe Lugano Convention. Second, we discuss three recent contributions by economic theorists on this subject of extended liability, namely Pitchford (1995), Boyer and Laffont (1995) and Boyd and Ingberman (1994). These authors develop principal-agent models and come by different paths to the conclusion that a regime of partial extended liability would be preferable to a regime of full extended liability.

2. THE LAWS AND THE JURISPRUDENCE

2.1 Three Typical Canadian Cases: Bulora, Panamericana, Lamford

Three interesting Canadian court cases are a good introduction to the topics covered in this paper. Those cases deal with insolvency in environmental damages. In all those cases, the courts conclude that the clean-up costs and related costs should take priority in the distribution of assets. Moreover, they may hold a receiver-manager or trustee in bankruptcy personally liable for those clean-up costs if the insolvent firm's assets cannot cover the costs of cleaning-up. The three cases *Canada Trust v. Bulora Corporation, Panamericana De Bienesy Servicos v. Northern Badger Oil & Gas Ltd.,* and *Re Lamford Forest Products Ltd.,* raise important issues regarding receivers, receiver-managers, trustees and lenders' liability.[1]

In the 1981 *Bulora* case, a Fire Marshall issued an order to compel the receiver-manager appointed by the court at the request of the main lender, Canada Trust, to "either demolish or repair the units in the subdivision that were uninhabitable, run down or a fire hazard." The court was asked to state if Canada Trust, which took possession of Bulora's assets, had to comply with that order. The lender argued that the costs it would have to incur by following the Fire Marshall's order were larger than the insolvent firm's assets. Considering the legal management and control powers which a receiver-manager has, the judge stated (cited by Klimek):

> There remains the major problem of determining who should bear the costs of the demolition. The order of the Fire Marshall is of vital concern for the safety of residents of the units adjacent to and close by the abandoned units. The safety of those persons occupying such units should be of paramount importance. If the receiver is given wide and sweeping powers in the management of the company, surely in the course of such management it has a duty to comply with a demolition order where the safety of individuals is so vitally concerned. It is indeed unfortunate that a creditor must suffer the loss resulting from the demolition. Nevertheless, the asset to be managed by the receiver must, in my opinion, be managed with a view to the safety of those residing in and beside that asset. Receivership cannot and should not be guided solely by the recovery of assets. In my view, there is a social duty to comply

[1] For a more complete coverage of those cases, see Klimek (1990).

> with an order such as this which deals with the safety of individuals affected by an asset the receiver is managing.

The 1990-91 *Panamericana* case dealt with an order from the Energy Resources Conservation Board to Northern Badger requesting an undertaking that the oil wells that the company had obtained through the insolvency procedures be properly dealt with, which meant in particular that some wells should be abandoned according to regulations. The trial court and the Court of Appeal first concluded that the order for which the Board had proper jurisdiction inferred that the Receiver had to pay for the abandonment costs from the assets of the bankrupt company before those assets could be distributed to the secured lenders [the Court of Appeal overturned the trial court on this point]. Proceeds from the sale of the insolvent company were sufficient to cover those costs and therefore, the court did not address the issue of liability if indeed those costs had been greater than the value of the firm's assets. The Court of Appeal clearly stated that it looked only at that situation (cited by Klimek):

> Thus the direct issue in this litigation, in my opinion, is whether the *Bankruptcy Act* requires that the assets in the estate of an insolvent well licensee should be distributed to the creditors leaving behind the duties respecting environmental safety, which are liabilities, as a charge to the public.

Nevertheless, this case clearly established that the costs of environmental clean-up priority over the distribution of assets to the insolvent firm's creditors, secured or not.

The 1991 *Lamford* case brought the issue of liability for the clean-up of environmental damage when the bankrupt firm's assets are insufficient to cover those costs. Lamford Forest Products Ltd. operated a sawmill and had contaminated land with different hazardous substances before filing for bankruptcy in 1990. The Regional Waste Manager issued an order pursuant to the Waste Management Act[2]

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[2] S.B.C. 1982, c. 41. Section 22 [am. 1990, c. 74, s. 11] provides:
(1) Where a manager is satisfied on reasonable grounds that a substance is causing pollution, the manager may order
(a) the person who had possession, charge, or control of the substance at the time it escaped or was emitted, spilled dumped, discharged, abandoned or introduced into the environment,
(b) any other person who caused or authorized the pollution, or
(c) the person who owns or occupies the land on which the substance is located or on which the substance was located immediately before it escaped or was emitted, spilled dumped, discharged, abandoned or introduced into the environment to do nay of the things referred to in subsection (2).
(2) An order under subsection (1) shall be served on the person to whom it applies and may require that person, at his own expense, to

requesting that the company carry out an assessment of the costs of decontamination and manage it. It turned out that the estimated costs of cleaning up the environmental pollution would surpass the recoverable assets value, therefore leaving the secured or preferred creditors uncompensated. The Minister of the Environment argued here for the order to be binding on all successors including the trustees. Still, the court found that he could not hold the trustee liable for the clean-up costs because the trustee did not have possession, charge or control of the hazardous substances when the pollution occurred. As to give priority to the clean-up costs in the distribution of the insolvent firm's assets, the court followed the *Bulora* and the *Panamericana* cases and found that those costs had priority over the other secured or preferred creditors. However, it recognized that trustees had an important role to play in winding up insolvent firms and for that reason declared that the trustee's fees would have priority over the costs of cleaning-up if the assets of the firm are insufficient to cover both the trustee's fees and the clean-up costs.

These three cases are typical of a trend: environmental damages are likely to have priority level when the generator of an environmental accident turns out to be insolvent. In these Canadian cases, this has been done by forcing the receiver, receiver-manager or trustee to supervise and pay for the clean-up costs up to the value of the bankrupt firm's assets. Although it is not absolutely clear that the trustees will be properly and completely indemnified for their troubles, since they may end up being found liable if the court eventually admit the argumentation which the Minister of the Environment made in the *Lamford* case, it is the secured lenders which have the most to lose if the trend made explicit in the three cases above is confirmed: they may lose their priorities and their security exemption when environmentally risky firms become insolvent. Hence, they have vested interest in upgrading the monitoring of their client firms, in particular when they make the loan and when they exercise their options at foreclosure. But if they keep monitoring the operations of the firm on a regular basis, they may find themselves in the category of "owners and operators" and therefore may become liable for clean-up costs if the firm, responsible for some environmental damage, becomes insolvent.

(a) provide to the manager information that the manager requests relating to the pollution,
(b) undertake investigation, tests, surveys and any other action the manager considers necessary to determine the extent and effects of the pollution and to report the results to the manager,
(c) acquire, construct or carry out any works or measures that are reasonably necessary to control, abate or stop the pollution,
(d) adjust, repair or alter any works to the extent reasonably necessary to control, abate or stop the pollution
(e) abate the pollution, and
(f) carry out remediation in accordance with any criteria established by the director and any additional requirements specified by the manager.

2.2. Environmental Protection Through Liability

The widely recognized polluter pay principle in the domain of environmental risks turned out to be more difficult to apply than many thought. Often, compensating properly victims of environmental disasters has been nearly impossible because of three main reasons: first, the specific polluter may be difficult to identify; second, the polluter's insurance contract or coverage may be incomplete, insufficient or invalid because of some illegal or improper action taken by the specific polluter; third, the polluter may be or become insolvent once liability for clean-up costs or compensation is declared. To avoid those difficulties and assure rapid compensation for victims and faster clean-up of polluted facilities, governments have passed or are considering passing laws creating dedicated funds generally financed by taxes. Moreover, they have given to regulators access to different and broad legal ways to recover clean-up costs from different potentially liable parties to reduce the costs of these funds. Although several European countries and Canada have already such a system,[3] the most important and vivid example is CERCLA, the 1980/1985 Comprehensive Environmental Response, Compensation and Liability Act, in the US because of its wide ranging legal principles, the extensive set of legal comments and articles related to it and in particular the significant jurisprudence to which it led.

According to CERCLA, the parties responsible for clean-up costs following the occurrence or discovery of an environmental accident or disaster include the "current and past owners and operators of the facility." If the notion of an "owner" is well established, that of an "operator" has been subject to different interpretations. In the present context, a bank may be considered, and has been in different court cases, an operator of a facility and therefore liable for cleaning-up the damages, if it has supervised or monitored relatively closely the activities of the firm. In that respect, the law contains a security interest exemption rule that allows a bank to monitor the firm to protect its security interests but the meaning and limits of that exemption rule led to different interpretations. We will review below some important court cases in that respect, namely the 1985 *Mirabile* case, the 1986 *Maryland Bank and Trust* case, the 1990-91 *Fleet Factors* case and the 1994 *Bergsoe* case. In the *US v. Mirabile* case, the Mellon Bank was considered an "operator" and held liable for the environmental clean-up costs but two other banks also involved in financing the firm responsible for the pollution were not because they were less significantly involved that the Mellon Bank in supervising the operations of the firms. In the *US v. Maryland Bank and Trust* case, the bank was found liable for clean-up costs because it was considered an "owner" of the facility at the time the pollution was discovered; the bank had a mortgage on the property that it exercised at the foreclosure of the firm. In the *US v.*

[3] See Klimek (1990), Smets (1992) and Bianchi (1994)

Fleet Factors case, the bank was found an "operator," and therefore liable for clean-up costs, because its participation in the financial management of the firm gave it an "ability to influence" the overall management of the firm. That court decision produced lots of controversy and it prompted the US Environmental Protection Agency to propose some practical tests to detect when a bank can be considered an operator on a firm or facility; the EPA's tests gave significant protection to lenders and for that reason different public authorities challenged it in court to recover clean-up costs from as many liable parties as possible. Following the rejection of the EPA's final rule, the important *Bergsoe* case provided for a more restrictive interpretation of the "owner and operator" status and therefore a more generous interpretation of the security interest exemption. A thorough revision of the law is presently on the political agenda in the US.

2.3 The Major Court Cases

Liability under CERCLA is both in theory and in practice a complex issue. The jurisprudence is particularly troublesome with respect to the liability of parties who have or have had only an indirect link with the storage, handling or disposal of hazardous substances.

Strasser and Rodosevich (1993) stress that two basic legal principles are indeed underlying this jurisprudence. The first principle is that liability "extends to all those who have assumed and exercised responsibility for handling hazardous substances, including handling related to environmental compliance." The second principle is that liability "extends to parties with supervisory authority over general business operations that included, or should have included, waste handling and environmental compliance responsibilities." An implication of those principles is that parties that are not linked to the direct management of the facility should be exempt from liability. However, determining who have sufficient supervisory authority to be considered an operator has been quite difficult and troublesome, in particular when one considers the liability of parties that have had only partial influence or control over the facility. In such a group, one finds parent companies, corporate officers, directors, shareholders, successor companies, previously dissolved companies, trustees, receivers, executors, administrators, and designers and builders of the facility, manufacturing service providers, franchisers and franchisees. Clearly, it is quite common for commercial lenders to be involved in monitoring and offering management advice to their borrowers, in particular if the borrower ends in financial distress as when it is found liable for an environmental disaster. They may then subject themselves to claims of lender liability.

Because of the traditional role of lenders as monitors and supervisors, CERCLA provides a "secured creditor exemption." This exemption states that "a person who, without participating in the management of a vessel or facility, holds indicia of ownership primarily to protect his security interest in the vessel or facility" should not be considered as an owner or an operator. The courts that have had to interpret the meaning of "without participating in the management of the facility," have reached diverse conclusions. We will consider three particularly significant cases in that respect. Our presentation of these cases borrows extensively from Strasser and Rodosevich (1993), Staton (1993) and the Court judgment in *US v. Fleet Factors* as published by the *Journal of Environmental law 4[1]* (1992).

In *US v. Mirabile*, the court had to consider the involvement of three financial institutions to decide whether they could qualify as "owners" or "operators" or whether they could involve the secured creditor exemption rule. The facts are as follows: the American Bank and Trust Company (ABT) lent money to the owner of a waste disposal site, and held a mortgage on the facility; Mellon Bank provided financing to a paint manufacturer using the Mangels' site, and held a security title to the inventory and assets of the firm; finally, the Small Business Administration (SBA) lent money to the firm and held a second lien security interest in machinery, equipment, inventory and accounts receivable with a second mortgage on real estate and a pledge of stock.

In its judgment, the court determined that ABT was neither an owner nor an operator as it held only a security interest in the facility, even if it did hold formal ownership title following foreclosure. In so doing, the court followed the 1985 landmark case *In Re T.P. Long Chemical* in which the judgment upheld the security interest exemption and stated that the bank had "indicia of ownership" only to protect its interest and therefore was not liable for clean-up costs even if it had become the legal owner of the facility after the bankruptcy of the company. So, the court reaffirmed that actual participation in the management of the facility and not the simple authority to get involved was necessary to hold a party liable for clean-up costs. The SBA gave financial advice to the Advisory Board responsible for overseeing the operations of the facility. Staff from the Mellon Bank sat on that Advisory Board and therefore the Bank had the opportunity to contribute closely to the management of the facility. Advising and even sitting on the Advisory Board were not enough, according to the court, to make the SBA or the Mellon Bank operators of the facility. However, Mellon Bank employees created a direct link with the company through a reporting system and they conducted regular site visits of the facility. The court considered the reporting system and the site visits as sufficient involvement to make Mellon Bank an operator of the facility and therefore responsible for clean-up costs.

A somewhat different judgment was made regarding the security exemption rule in the *U.S. v. Maryland Bank & Trust* case. Here, the Bank held a mortgage on a farm used as a waste disposal site. The Bank forced the firm into bankruptcy and purchased the land at the foreclosure sale. Drums of chemicals were discovered leaking in 1983 and the EPA sued the Bank for clean-up costs. The Bank invoked the secured creditor exemption. The Maryland district court rejected the argument and found the Bank liable for clean-up costs because of its ownership by virtue of its foreclosure and purchase of the facility. The court stated that:

> The [secured creditor] exemption . . . covers only those persons who, at the time of the clean-up, hold indicia of ownership to protect a then-held security interest in the land. The verb tense of the exclusionary language is critical. The security interest must exist at the time of the clean-up. The mortgage held by [the Bank] . . . terminated at the foreclosure sale . . . at which time it ripened into full title. [The Bank] purchased the property at the foreclosure sale not to protect its security interest, but to protect its investment. Only during the life of the mortgage did [the Bank] hold indicia of ownership primarily to protect its security interest in the land.[4]

Contrary to the judgment concerning the American Bank and Trust in the *US v. Mirabile* case, the court did not consider whether the Bank exercised a direct participation in management decisions relate to the facility. It found the Maryland Bank and Trust liable solely because the Bank was the "owner" since of its purchase of the property upon foreclosure. One should note that the court decided that the Maryland Bank and Trust had not purchased the property to protect its security interest, but for investment reasons since it had held the title for nearly four years compared with four months for the American Bank and Trust in the *US v. Mirabile* case.

The Eleventh Circuit's judgment in *US v. Fleet Factors* expanded significantly the basis upon which they could hold a secured creditor liable. The facts are as follows: A commercial factoring firm, Fleet Factors, loaned money to a cloth printing firm secured by the firm's receivables, equipment, inventory, and fixtures. Contamination occurred because of the firm's activities. The firm went bankrupt and Fleet Factors exercised its security interest in inventory and equipment but not on its separate mortgage on the facility. The EPA sued Fleet Factors for clean-up costs. Contrary to the previous cases, the court here directly imposed liability on the secured

[4] United States v. Maryland Bank & Trust Co., 632 F. Supp. At 579.

creditor as a participant in the financial management of a facility. The court stated that:

> Although similar, the phrase "participating in management" and the term "operator" are not congruent. Under the standard we adopt today, a secured creditor may incur . . . liability without being an operator, by participating in the financial management of a facility to a degree indicating a *capacity* to influence the corporation's treatment of hazardous wastes. It is not necessary for the secured creditor to actually involve itself in the day-to-day operations of the facility in order to be liable — although such conduct will certainly lead to the loss of the protection of the statutory [secured creditor] exemption. Nor is it necessary for the secured creditor to participate in management decisions relating to hazardous waste. Rather, a secured creditor will be liable, if its involvement with the management of the facility is sufficiently broad to support the inference that it could affect hazardous waste disposal decisions if it so chose. We therefore specifically reject the formulation of the secured creditor exemption suggested by the district court in *Mirabile*.[5]

The court imposed here a new standard for liability of secured creditors. The simple "capacity to influence" the management of hazardous substances could make the lender liable. This new standard made lender quite nervous because as we stated above, it is quite common for commercial lenders to hold substantial rights to monitor and influence the financial and even the general management of their client firms. In an attempt to show that the court decision was less remarkable that it appeared, Strasser and Rodosevich (1993) give us a more detailed analysis of the facts behind the Fleet decision: "Fleet, after the facility went bankrupt: (1) required the printing facility to get Fleet's approval before shipping goods to customers; (2) established the price for excess inventory; (3) determined when and to whom finished goods should be shipped; (4) determined when employees should be laid off; (5) supervised the site office administrator; (6) received and processed employment and tax forms; (7) controlled access to the facility; and (8) contracted with an industrial liquidator to

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[5] *Journal of Environmental Law 4[1]*, p. 148.

dispose of the fixtures and equipment." They concluded by writing: "While the language of *Fleet* seems to articulate a broad new standard of liability, its facts support a less expansive basis of liability. Nevertheless, counsel advising clients in the future will face the problem of predicting whether the broad interpretation of *Fleet* will be emphasized."

On the other hand, the court made quite clear its intent to induce financial institutions to monitor their borrowers to prevent environmental disasters. The court rejected the allegation that its judgement would make financial institutions reluctant to lend and explicitly stressed that it wished to encourage lenders to monitor and supervise their borrowers' environmental policies and practices while making financial decisions on sound financial and environmental basis. The court stated that:

> Our interpretation of the exemption may be challenged as creating disincentives for lenders to extend financial assistance to businesses with potential hazardous waste problems and encouraging secured creditors to distance themselves from the management actions, particularly those related to hazardous wastes, of their debtors. As a result the improper treatment of hazardous wastes could be perpetuated rather than resolved. These concerns are unfounded.
>
> Our ruling today should encourage potential creditors to investigate thoroughly the waste treatment systems and policies of potential debtors. If the treatment systems seem inadequate, the risk of CERCLA liability will be weighed into the terms of the loan agreement. Creditors, therefore, will incur no greater risk than they bargained for and debtors, aware that inadequate hazardous waste treatment will have a significant adverse impact on their loan terms, will have powerful incentives to improve their handling of hazardous wastes.
>
> Similarly, creditors' awareness that they are potentially liable under CERCLA will encourage them to monitor the hazardous waste treatment systems and policies of their debtors and insist upon compliance with acceptable treatment standards as a prerequisite to continued and future financial support. Once a secured creditor's involvement with a facility becomes sufficiently broad that it can anticipate losing its exemption from CERCLA liability, it will have a strong incentive to address hazardous waste problems at the facility rather than studiously avoiding the investigation and

> amelioration of the hazard. . . . With respect to Fleet's involvement at the facility from the time it contracted with Baldwin in May 1982 until Nix left the facility in December 1983, we share the district court's conclusion that Fleet's alleged conduct brought it outside the statutory exemption for secured creditors. Indeed, Fleet's involvement would pass the threshold for operator liability. Fleet weakly contends that its activity at the facility from the time of the auction was within the secured creditor exemption because it was merely protecting its security interest in the facility and foreclosing its security interest in its equipment, inventory, and fixtures. This assertion, even if true, is immaterial to our analysis. The scope of the secured creditor exemption is not determined whether the creditor's activity was taken to protect its security interest. What is relevant is the nature and extent of the creditor's involvement with the facility, not its motive. To hold otherwise would enable secured creditors to take indifferent and irresponsible actions towards their debtors' hazardous wastes with impunity by incanting that they were protecting their security interests. Congress did not intend CERCLA to sanction such abdication of responsibility.[6]

After *Fleet Factors*, the Court of Appeal judged *Bergsoe Metal v. East Asiatic (In re Bergsoe Metal*). Robb and Sheeney summarize the facts in a comment in *The Journal of Environmental Law 4[1]*. They tell us that in *Bergsoe*, a municipal corporation became the owner of polluted land by exercising its security interest in a sale-and-lease-back contract with a lead recycling plant. They characterized the municipality's involvement as follows: (1) the creditor 'negotiated and encouraged' the building of the plant, (2) the lease expressly permitted the creditor to inspect and foreclose upon the premises, and (3) the creditor entered a workout agreement with the debtor and a trustee not to exercise its rights to default remedies under the lease. The court specifically referred to the *Fleet Factors* judgment but wrote:

> It is clear from the statute that, whatever the precise parameters of 'participation', there must be *some* actual management of the facility before a secured creditor will fall outside the exception. Here there is none, and we therefore need not engage in line drawing.[7]

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[6] *Journal of Environmental Law 4[1]*, pp. 149-151.

[7] *Journal of Environmental Law 4[1]*, p. 154.

The court concluded that the municipal corporation did not participate in the management of the plant and therefore could not be an 'owner' under CERCLA. The *Bergsoe* judgment rejects the wide ranging interpretation of the *Fleet Factors* judgment by insisting on '*some*' participation in management before a secured creditor could be held liable for clean-up costs. However, the court refused to 'engage in line drawing' that is to clarify which lender activities would show '*some*' participation in management by a secured creditor. Therefore, the Bergsoe judgment did not reduce the uncertainty raised by the previous court cases and in particular by the Fleet Factors case.

2.4 The EPA 1992 Rule and its 1994 Rejection by the court.

Following *Fleet Factors* judgment, it appeared that the availability of credit to environmentally risky businesses would be curtailed. The EPA then attempted to clarify the limits of the security interest exemption. The EPA asserted that financial institutions should not become environmental enforcers. The EPA rule stated that (Staton 1993):

> 1. Certain activities may be undertaken when protecting a security interest under authority of ownership. Such activities may include inspections or monitoring of the borrower's business and collateral, providing financial or other assistance, engaging in loan workout activities, and foreclosing on secured property. These activities would not create the form of ownership which would generate liability under CERCLA.
>
> 2. Participation in management means "actual participation in the management or operational affairs by the holder of the security interest, and does not include the mere capacity, ability, or unexercised right to influence facility operations."
>
> 3. The lender may foreclose on the property or take a deed in lieu of foreclosure and, so long as the lender lists the property for sale with a broker within twelve months of foreclosure and actively attempts to sell the property, the lender will not be held liable for CERCLA violations.
>
> 4. The EPA rule encourages, but does not mandate, environmental inspections by lending institutions prior to taking a security interest. Such inspections would be consistent with the security

> interest exemption and the lender would not be a participant in management.

Under the EPA rule, the following activities would make a secured creditor an owner under CERCLA:

> 1. Actually exercising decision making control over, or taking responsibility for, environmental compliance.
>
> 2. Actually controlling, at a management level, the borrower's environmental compliance duties.

In the year following the publication of the EPA lender liability rule, two court cases in which lenders participated significantly upheld the secured creditor exemption for those lenders by referring to the EPA rule: The 1993 *Kelley ex rel. Michigan Natural Resources Commission v. Tiscornia* case and the 1993 *Ashland Oil Inc. v. Sonford Products Corp.* case. In both cases, the courts made a clear distinction between influence and control, and decided that, although the lenders had substantial activities aimed at influencing the decisions of their borrowers, the test of "control" was a determinant in the upholding of the secured creditor exemption. In the latter case, "the court concluded that the secured creditor exemption relieved the lender of liability, even when faced with allegations that pollution occurred while the lender held title to the real estate." (Staton 1993).

In the former case, the court concluded that influence over the decisions of a polluting client firm is not a sufficient condition for liability under CERCLA. The lender's influence activities ranged from the bank approval of outside consultants to replacing the CEO. Here, the court explicitly rejected the rule used in the *Fleet Factors* case and stated that "capacity to influence" does not lead to CERCLA liability. Moreover, the court affirmed that influence by itself is not a sufficient condition for CERCLA liability. The court addressed the incentive issue by expressing fears that banks, if found liable in cases similar to *Tiscornia*, would be reluctant to provide assistance to prevent bankruptcy of their troubled polluting client firms: lenders are not environmental police officers.

In the 1994 appeal case *Kelley v. Environmental Protection Agency*, the court held that "Congress in enacting CERCLA did not give the EPA authority — by rules and regulations — to affect the imposition of liability under CERCLA." Therefore, the court rejected the EPA rule and tests as an interpretative rule. As mentioned by Simons (1994), the court noted that the EPA had tried unsuccessfully to convince Congress to amend CERCLA before it promulgated its lender liability rule and tests.

The court stated that the only alternative for the EPA was to try a legislative change again. Simons (1994) comments farther that legislative change may arrive sooner than later since some senators have already declared their support. Moreover, the Clinton administration has suggested its intention to introduce a revision of CERCLA similar to the EPA proposed regulation.

2.5 The 1993 EC Green Paper and the Council of Europe Lugano Convention

Following discussions surrounding the 1993 EC Green Paper on remedying environmental damage, a communication from the Commission to the Council and Parliament (Commission of the EC, 1993), member states of the Council of Europe, the other states and the European Economic Community signatory have agreed on a Convention on Civil liability for damage resulting from activities dangerous to the environment (Council of Europe, 1993). This convention, open for signature by participating states, advocates for a regime of strict, joint and severed liability taking into account the "polluter pays" principle and declares that its object and purpose "aims at ensuring adequate compensation for damage resulting from activities dangerous to the environment and also provides for means of prevention and reinstatement."

Article six of the Convention declares who will be liable for the damage caused. It states that:

> 1. The operator in respect of a dangerous activity shall be liable for the damage caused by the activity as a result of incidents at the time or during the period when he was exercising the control of that activity.
>
> 2. If an incident consists of a continuous occurrence, all operators successively exercising the control of the dangerous activity during that occurrence shall be jointly and severally liable. However, the operator who proves that the occurrence during the period when he was exercising the control of the dangerous activity caused only a part of the damage shall be liable for that part of the damage only.
>
> 3. If an incident consists of a series of occurrences having the same origin, the operators at the time of any such occurrence shall be

jointly and severally liable. However, the operator who proves that the occurrence at the time when he was exercising the control of the dangerous activity caused only a part of the damage shall be liable for that part of the damage only.

4. If the damage resulting from a dangerous activity becomes known after all such dangerous activity in the installation or on the site has ceased, the last operator of this activity shall be liable for that damage unless he or the person who suffered damage proves that all or part of the damage resulted from an incident which occurred at a time before he became the operator. If it is so proved, the provisions of paragraphs 1 to 3 of this Article shall apply.

5. Nothing in this Convention shall prejudice any right of recourse of the operator against any third party."

Article eight of the Convention lists the situations that may relieve an operator from liability. It states that:

The operator shall not be liable under this Convention for damage which he proves:

a. was caused by an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable and irresistible character;

b. was caused by an act done with the intent to cause damage by a third party, despite safety measures appropriate to the type of dangerous activity in question;

c. resulted necessarily from compliance with a specific order or compulsory measure of a public authority;

d. was caused by pollution at tolerable levels under local relevant circumstances ; or

> e. was caused by a dangerous activity taken lawfully in the interests of the person who suffered the damage, whereby it was reasonable towards this person to expose him to the risks of the dangerous activity.

Finally Article twelve of the Convention calls for a compulsory financial security scheme. It states that:

> Each Party shall ensure that where appropriate, taking due account of the risks of the activity, operators conducting a dangerous activity on its territory be required to participate in a financial security scheme or to have and maintain a financial guarantee up to a certain limit, of such type and terms as specified by internal law, to cover the liability under this Convention.

As for the basic definition of an operator, the Convention (article 2) states that "'Operator' means the person who exercises the control of a dangerous activity" with person meaning any individual or partnership or any body governed by public or private law, whether corporate or not, including a State or any of its constitutional subdivisions."

Considering our discussion of the US courts' interpretation of the definition of "owner" and "operator" in the jurisprudence on CERCLA, one may wonder how the European courts will interpret the definition of "operator" contained in the Lugano Convention. If the courts take a broad definition of an operator as a "person" who controls the operations of a facility, it is likely that arguments will emerge about what is "control." Without an explicit security interest exemption as in CERCLA, one may wonder if banks or more generally lenders will be considered operators when their monitoring and supervising activities are sufficiently broad and developed as to give them a clear ability to influence and control of the financial, if not the general, management of the operator. Only time and jurisprudence will say how narrowly or broadly the courts will use these notions and whether they will eventually drag banks into liability for clean-up costs .

3. THE ANALYTICAL FOUNDATIONS OF ENVIRONMENTAL PROTECTION: A PRINCIPAL-AGENT FRAMEWORK

As a point of departure, consider a principal-agent framework in which a principal delegates a task to an agent. The difficulty of this delegation lies in the

incomplete information that the principal may have about the agent. The agent may have private information about the cost of carrying out the task (an adverse selection phenomenon) or about how much effort he chooses when undertaking the task (a moral hazard phenomenon).[8]

The literature has extensively studied this problem (see for example Holmstrom (1979) for the moral hazard problem with risk aversion, Guesnerie and Laffont (1984) for the adverse selection case, Laffont and Tirole (1986) and McAfee and McMillan (1987) for the case of moral hazard and adverse selection with risk neutrality). We need several additional features in this traditional model to analyze the present problem. First, a negative externality generated by the agent must be added, for example an environmental accident generated with some probability. Laffont (1995) analyzes the case where the principal internalizes this externality. The control problem of the principal is then a multiple task problem since besides the agent's effort required to fulfill the task, the principal must also worry about the safety effort for preventing the environmental problem. When the agent is risk neutral, this environmental issue does not increase much the complexity of the control since a penalty can be imposed on the agent in case of an accident to induce the appropriate safety care. The second ingredient for the analysis is the limited liability of the agent.[9] Then, safety care cannot be induced by penalties if an accident occurs but by rewards if an accident does not occur. This contributes to increase the informational rent of the agent and the principal must alter its control to take into account this additional costly rent. The final step is to take into account the fact that the externality affects a third party: a bank controls a firm that can create an environmental damage to consumers (Boyer and Laffont 1995, Pitchford 1995); a retailer buys a manufacturer's products that can be dangerous for the final consumers (Boyd and Ingberman 1994).

The question raised is that of public intervention in a structure such as Figure 1 when the firm has a limited liability constraint and the principal (assumed without liability constraint) has incomplete information about the agent. In Pitchford (1995), the principal is the lender and the agent the firm. The principal-agent problem is a moral hazard problem. Pitchford raises the question of how appropriate extending the liability of the lender is, given that it will change the contract offered to the agent by the principal. Boyer and Laffont (1995) raise a similar question in a more systematic way with both moral hazard and adverse selection and with two principals that are the

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[8] See van Ackere (1993) for a survey of applications of the principal-agent framework to different functional fields.

[9] Limited liability and adverse selection has been also studied by Sappington (1983) and Demski et alii (1988).

lender on the one hand and the insurance sector on the other hand. Liability rules and other policy instruments are considered. Boyd and Ingberman (1994) consider first a model as in Figure 1 but with several principals and take into account the fact that the government policy regarding liability may induce a different structure (which has efficiency costs) in which each principal deals with his own agent (see Figure 2). The asymmetric information of the underlying principal-agent model is not put forward but the model could be extended as in Martimort (1996).

[FIGURE 1]
[FIGURE 2]

4. FULL vs. PARTIAL LIABILITY FOR LENDERS

We will review in this section these three recent contributions to the literature on extended liability.

4.1 The Pitchford 1995 Contribution

Pitchford (1995) looks at the problem of extending liability to lenders in the case of judgement-proof owner-managed firms, that is firms subject to limited liability. Pitchford shows that a trade-off emerges between fairness and efficiency in the following sense: extending liability to lenders would increase the probability of proper compensation of the external victims of an accident but might increase the probability of an accident. The underlying context is that of CERCLA and Pitchford comes to the conclusion that a "partial" liability regime would minimize the probability of an accident.

Pitchford's analysis is particularly simple. A firm chooses unobservable safety activities whose level depend on the private benefit and cost that these activities bring to the firm. The benefit is measured by the difference between the firm's profit if no accident occurs and its profit if an accident occurs. If the difference in profits increases, then the firm finds more attracting the no accident state and therefore increases its accident preventing effort level, implying that the probability of accident decreases. Vice-versa if the difference in profits decreases. Pitchford then shows how the limited liability regime affects this difference in profits, by extending liability to lenders, and by requiring a minimum equity investment by the owner. The author considers the case of a catastrophic accident that pushes the firm into insolvency. The limited liability regime implies that there is a maximum that the firm will be liable for if an accident occurs: the lower the maximum, the weaker the incentives the owner has to reduce the probability of an accident. Requiring that the limited liability level be set at the highest possible level would therefore be appropriate and therefore set at the

sum of the firm's current profit plus the owner's wealth; in other words, to require that the owner invest in his firm's equity the total value of his wealth. Extending liability to lenders means that the lenders must charge an insurance premium in the no accident state for the compensation they may eventually have to pay out to the victims of an accident: given that the maximal amount the firm is liable for is fixed, the difference in profits decreases when liability is extended to lenders. Therefore, the owner faces weaker incentives to reduce the probability of an accident. Different ways are available to achieve a given difference in the level of profits between the accident state and the no accident state and therefore a given probability of an accident. All of those are equivalent in terms of efficiency, that is, in terms of the probability of an accident minimized when liability or compensation is set at the value of the owner's wealth. For lower values of liability, increasing the owner's equity in the firm can reduce the probability of an accident. For higher values, decreasing the insurance premium paid by the firm to the lender can reduce the probability of an accident. The decrease can be achieved by decreasing the level of extended liability that falls on the lender. Nevertheless, the different ways to achieve a given probability of an accident will not in general be equivalent as to the compensation level achieved.

One may question Pitchford's analysis on many points. The level of the owner's wealth is assumed exogenous to the determination of the efficient liability level. This analysis suggests that hazardous industries would eventually be controlled and owned by low wealth owners.[10] Then, the level of liability and compensation defined as efficient by Pitchford has little content in terms of global allocative efficiency. This remark is not unrelated to the fact that it is not clear in Pitchford's analysis if the owner's wealth is known or not.[11] Endogenizing the owner's wealth level (for instance

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[10] According to Ringleb and Wiggins (1990), the change in liability laws in the 70s have led to a significant increase in the number of small corporations in hazardous industries.

[11] Indeed, after defining e as equity, w as the owner's wealth, y as the payment made to the lender by the firm in state i, and v as the constant cash flow of the project, Pitchford writes (pp. 9-10) :

"Recall that the owner contributes equity $e \leq w$ to the project. We assume that she faces limited liability (being a close corporation, for example) or if liability is not limited (such as in a partnership) that remaining wealth $w - e$ can be costlessly hidden ... If we combine the two constraints on equity $e \leq w$ and $y_i \leq v + e$, then e can be eliminated from the problem. Therefore the owner can pay no more to the lender than the upper limit on her wealth $v + w$ in either state, and the following wealth constraints must be satisfied :

$$y_i \leq v + w \qquad i = 0,1.$$"

But then it is as if the firm cannot hide anything.

by requiring that to be an owner in that industry, one must show a net wealth of say *h*, the cost of an accident), then all conflict between fairness and efficiency would evaporate. In Pitchford's analysis, the lender can require that the owner invest in the firm a minimum level of equity. This seems to suggest that the lender can choose the owner and therefore the owner's wealth: if the lender can find an owner with sufficient resources to cover the cost of an accident, then he should be induced to do it and Pitchford's analysis falls apart. Finally, Pitchford's proposition two to the effect that social surplus is maximized when liability is set at the firm's current profit plus the owner's wealth fails to recognize that the social cost of public funds is higher than one because of the distortions created by taxation. Hence, a money unit of public support or compensation for the victims is costing more than the nominal money unit because governments must raise it before paying it. This would lead to a unique socially efficient probability of an accident above that found by Pitchford.

4.2 The Boyer-Laffont 1995 Contribution

Boyer and Laffont (1995) consider a model where a firm or project needs financing by a bank. For simplicity reasons, they reduce the problem to the following: the level of investment necessary is F in each of two periods and in each period the project generates either a low benefit π_1 or a high benefit π_2, where typically $\pi_1 < F < \pi_2$, with an expected benefit of $\bar{\pi} > F$; the firm has no equity but it can take safety actions in period one to reduce the probability of a catastrophic environmental accident in period two, which would push it into insolvency[12]. This simplified context captures, as we will see, the essential ingredients for analysing the appropriateness of lender liability in the main different practical situations. In particular, it enables the authors to address two monitoring and incentive issues that the lender liability rules raise: first profits are usually difficult or costly to observe and second the prevention activities of the firms are also difficult or costly to observe. As we noted above, those considerations are the basic issues behind Judge Kravitz's decision in the Fleet Factors Case. The judge is quite conscious that extending liability to lenders may create disincentives "to extend financial assistance to businesses with potential waste problems" but added that his ruling "will encourage them [the lenders] to monitor the hazardous waste treatment systems and policies of their debtors and insist upon compliance with acceptable treatment standards as a prerequisite to continued and

[12] Because the safety activities are assumed to be taken and paid for in period 1 while the accident can occur in period 2, limited liability unambiguously reduces the incentives for safety and care. Beard (1990) shows that limited liability may reduce both the benefits and costs of safety and therefore have an ambiguous effect on care. The reduction in costs of safety is due to the fact that the marginal cost of safety is borne by the victims if an accident, making the firm insolvent, occurs. This Beard's effect is not present here.

future financial support . . . [and the lenders] will have a strong incentive to address hazardous waste problems at the facility rather than studiously avoiding the investigation and amelioration of the hazard." Underlying the judge's ruling is the assumption that the reluctance of lenders to lend money can indeed be neglected given that the credit conditions and contract can be continuously adjusted to fit the new level of expected liability or compensation that moreover becomes endogenous since the lender can require that the firm takes the desired level of preventive actions. As Boyer and Laffont show, the picture is a little bit more complex than assumed by the judge when the information structure is asymmetric: the firm has a better knowledge of its profit potential and of its accident prevention activities than the lenders. This information asymmetry, a typical characteristic of financial markets, modifies the relationships, lending conditions and financial contracting between firms and lenders. One must analyze the extended liability rules, present in Judge Kravitz's ruling, in this incomplete information context rather than in the symmetric or complete information context implicitly assumed by the judge.

Boyer and Laffont show that under complete information between the lender and the firm but incomplete information between the insurance sector and the firm[13], a regime of extended full liability to the lender when the firm goes bankrupt is optimal both as for lending level and as for safety level. They achieve this through a sequence of intermediate results on insurance and partial control regimes. Without compulsory insurance, the firm will prefer not to be insured because it can benefit from its limited liability when an accident occurs: the social cost of an accident is not properly internalized. Under compulsory insurance of the firm, internalization of the social cost of an accident is obtained but the insurer may find it impossible to offer a break-even insurance contract that induces a proper level of accident preventing effort by the firm because of the limited liability constraints and the fact that the insurer does not observe the firm's profit level. Even if the lender is in *de facto* control of the firm, he may choose to enforce an inefficient level of effort because he also benefit from the limited liability in case of an accident; then, conditional on the level of effort, the lender lends too often since the social cost of an accident is not completely internalized. Finally, Boyer and Laffont show that an extended full lender liability regime would achieve the first best levels of effort and lending. An alternative would be to impose compulsory insurance on the lender, assumed to be a deep pocket organization, rather than on the firm.

[13] The underlying assumption is that the lender found profitable to invest in the necessary monitoring technology but not the insurer whose relationships with the firm would not justify such an investment. Hence the difference in the information available to the lender and the insurer.

Boyer and Laffont next consider a first case of asymmetric information between lenders and firms: the firm's profit level is not observable by lenders but the accident preventing activities of the firm are. The authors claim that profit levels are typically difficult to observe not because of secret bank accounts but because of different forms of organizational inefficiencies, «superfluous» perks or activities, and transfer payments to associated companies. The authors first characterize the second best optimum benchmark as a function of the social cost of public funds.[14] They characterize the optimum under the assumption that if the lender cannot easily observe the profits of the firm, then the regulator cannot either. So, the optimum must satisfy the limited liability constraints of the firm, its individual rationality or participation constraint, and its incentive compatibility constraint in revealing its true level of profits. The social welfare function used is utilitarian: the expected social cost of an accident enters the function with a weight $(1+\lambda)$ because the government will compensate the victims; the profit of the lender is assumed observable, therefore taxable, and enters the function with a weight of $(1+\lambda)$; as for the firm's profit, it is not observable by the regulator and therefore enters with a weight of 1. Maximizing the social welfare, Boyer and Laffont can derive the second-best optimal lending policy under adverse selection.

They show that the propensity of the bank to lend in comparison with the social optimum depends on the balancing of two effects, the undervaluation of the externality on the one hand (leading to too much investment) and the undervaluation of the social value of the firm's rent (leading to too little investment). Full responsibility allows for a proper internalization of the externality but leads to insufficient lending. Boyer and Laffont characterize the partial level of responsibility that induces the appropriate (second best optimal) initial investment decision (however, the renewal of the investment in period two may be insufficient when the cost of public funds is low). Under the assumptions made by the authors, the firm can always catch a rent because of the limited liability constraints and the unobservability of its true profit level. The socially optimal investment rule must then depend on the social cost of public funds because the rent captured by the firm, although socially valuable, has a lower social value that the lender's profit that the regulator can observe. If the cost of public funds is high, the social cost (difference in values) of the firm's rent is high and the social regulator would like to see it minimized. The only instrument available to the regulator is the probability of refinancing the firm. Clearly, the firm wants refinancing. Boyer and Laffont show that the regulator can induce the firm to reveal its profit and

[14] This social cost of public funds allows the authors to take into account the distortions due to taxation : it cost $(1+\lambda)T$ to raise T through taxes. Jones, Tandon and Vogelsang (1990, chapter 3) review the empirical evidence and come to an estimated value of $\lambda \approx 0.3$ for developed countries and to an even higher value in developing ones.

therefore can minimize the rent it captures by linking the refinancing to the announced profit: the firm is not refinanced if profit is low and is refinanced if it is high. If the cost of public funds is low, the social cost (difference in values) of the firm's rent is low and the social regulator prefers to see the firm always refinanced rather than lose the social benefits of the project generated in period two: this implies that the rent captured by the firm is maximal but the regulator does not care since the social value of this rent is almost as high as the social value of the lender's profit.

The financial contract that the lender offers to the firm under the same asymmetric information structure as above may differ from the second best optimal contract for two reasons: first, the firm's rent has no value for the lender while it has a social value for the regulator and second, the lender loses the payments due to him when the firm goes bankrupt because of an accident. It turns out that the equilibrium contract is similar to a loan contract with a refinancing covenant. The bank requires a payment equal to the expected profit level in period one and a payment equal to the minimum level of profit in period two. The lender refinances the firm if it makes the required payment at the end of period one, and, if not, the bank seizes the firm's low level of profit (which is the only observable part) and the firm goes bankrupt. The bank will lend whenever its expected profit over the whole contract is nonnegative.

Comparing the two refinancing rules and the two lending rules, the social regulator's rule and the lender's rule, Boyer and Laffont derive the following. If the cost of public funds (from distortions due to taxation) is relatively high, both refinancing rules call for not refinancing the firm, for incentive reasons, when the declared level of profit is low. If the social cost of public funds is low, then the two refinancing rules differ: the social optimum calls for the refinancing of the firm more often than the lender does because here, the value attached by the regulator the firm's rent, although lower than the value of the lender's profit is still sufficiently high to warrant the pursuance of the project. Regarding the lending policies, Boyer and Laffont show that when the social cost of public funds is high and therefore the refinancing rules are similar, the lender refuses lending more often than the regulator if his undervaluation of the cost of the externality (he considers only his loss rather than the social loss, a factor that induces the lender to lend too much) is larger than de differential cost between the private lender and the regulator of the rent captured by the firm (a factor that induces the lender to lend too little); when the social cost of public funds is low and therefore the refinancing rules differ, a third factor comes into play since the rent of the firm will differ between the optimal financial contract and the lender's contract, the rent being higher in the former contract (a factor that induces the

lender to lend too little). Therefore, the private lender is more likely to lend too little as compared with how much lending would maximize social welfare if the social cost of public funds is low, that is if the distortions created by the taxation system are unimportant.

Boyer and Laffont consider partial lender liability as a way to bring the two lending rules closer to each other. Imputing full responsibility for environmental damage to the lender would make sure that the externality the accident causes on third parties is properly internalized but would be excessive because it would lead to insufficient lending, whether the social cost of public funds is high or low. A partial lender liability regime can lead to the proper lending level while still allowing for a proper internalization of the social cost of the accident. This rule calls for a lower lender liability level when the social cost of public funds is low because of the additional factor, identified above, which reinforces the tendency of the lender to lend too little. When the cost of public funds is high, the partial lender liability level proposed by Boyer and Laffont is decreasing with the rent captured by the firm under the private financial contract and increasing with the social cost of public funds and with the expected social cost of an accident. When the cost of public funds is low, the liability level is decreasing with the rent captured by the firm under the private financial contract and with the loss of social surplus, caused by the non refinancing of the firm under the private financial contract, and increasing with the rent captured by the firm under the second best optimal financial contract, with the expected social cost of an accident and with the social cost of public funds. Those partial lender liability rules would lead the private lender to finance the firm whenever it is socially optimal to do so. It remains however that when the cost of public funds is low, the private lender does not refinance the firm often enough: to reduce the informational rent captured by the firm, which is more costly to him than to the social regulator, the lender adopts a lending rule that creates a more significant inefficiency distortion in lending.

The second case of asymmetric information that Boyer and Laffont consider is a moral hazard case in which the lender can observe the profit of the firm but cannot observe its level of self prevention activities. As before, they assume that the competitive insurance sector observes neither the profit not the level of accident preventing effort. Boyer and Laffont first note that with risk neutrality, moral hazard problems could be solved by appropriate penalties without any rent being left to the firm. However, when the firm operates under a limited liability regime, then the maximum allowable penalty may not be large enough to solve costlessly the moral hazard problem. A rent must be abandoned to the firm to induce it to choose a proper level of effort because the wedge between what it gets under the two possible states must be created by rewards rather than penalties. They characterize the second best

optimum assuming that the regulator faces again the same incomplete information structure as the lender. Comparing the regulator's second best optimal lending rule and the private lender's rule, they show that the lender's financial contract offered to the firm will not be effort inducing as often as that preferred by the regulator, and that the lender lends more than called for by the socially optimal rule. They then go on to show that a regime of extended full lender liability is still insufficient to convince the lender to offer an effort inducing contract as often as the regulator would prefer. Moreover, conditionally on effort, the lender would then lend too little. Boyer and Laffont characterize the optimal partial level of lender liability as a function of the characteristics of the firm or the project. This liability level increases with the cost of effort and the rent captured by the firm and decreases with the productivity of effort in reducing the probability of an accident and with the social cost of the accident. Boyer and Laffont show that the proposed formula induces the second best optimal level of lending if the project is a high profitability project. Otherwise, the level of lender liability necessary to convince the lender to offer an effort inducing financial contract is too high for the lender to find it profitable to finance the firm, even if the project is socially valuable with a high level of effort. In such a case, the public policy choice is between maintaining the above lender liability level and letting the lender refuse to finance the firm, or reducing the lender's liability (possibly to 0%) and letting the project be financed and realized with a low level of accident preventing efforts. Clearly, both situations can arise. Boyer and Laffont suggest that two instruments would be necessary then to implement the second best optimal effort inducing financial contract, namely the above partial level of lender liability with a subsidy paid to the lender if financing occurs.

4.3 The Boyd-Ingberman 1994 Contribution

Boyd and Ingberman (1994) look at the issue of extended liability when the generator of risk may end in insolvency if an environment damaging accident occurs. The context analyzed is that of producers or manufacturers selling their output to contractors or retailers who then use that output into their own production of goods and services sold to the public. The manufacturers' products generate an accident risk, not the retailers' activities or transformation of the manufacturers' products. One could consider that the retailers simply resell the manufacturers' goods to the public. The authors consider three liability regimes: a producer only liability regime, a regime of proportional liability extended to the retailers, and a regime of joint and several liability extended to the retailers. If an accident, caused by a manufacturer's product, occurs and generates a loss that can be compensated from the manufacturer's assets, then the manufacturer is the only one liable to compensate the victims in all three regimes. If the accident generates such an important loss that the manufacturer's assets are not high enough to compensate the victims, then the manufacturer's assets are first

used, pushing her into bankruptcy, and the remaining level of compensation is made according to rules specific to each regime. In the producer only liability regime, no further compensation is made and the victims just bear the remaining cost of the accident (externality). In the proportional extended liability regime, each retailer of the manufacturer's product is made liable to pay a share of the uncompensated accident cost equal to the portion of the manufacturer's output sold to him; if because of this liability a retailer goes bankrupt before he can fully meet his share of the extended compensation, then the victims will again support the remaining share. Finally, in the joint and several extended liability regime, that part of compensation that a bankrupt retailer could not cover is allocated to the remaining retailers so that, unless all retailers eventually go bankrupt, the victims will be fully compensated.

The main contribution of Boyd and Ingberman is to introduce into their analysis of liability regimes the fact that the market relationships and transactions between economic agents, manufacturers and retailers in the present case, are endogenous and influenced by the liability regime. They show that under extended liability, proportional or joint and several, the possibility of separating equilibria emerges in which thinly capitalized shallow pocket retailers are served by similar shallow pocket manufacturers to externalize as much as possible the expected loss of an accident, and therefore benefiting from a low "insurance premium" included into the producer's price. Large deep pocket manufacturers then serve wealthy deep pocket retailers at higher prices. In the presence of returns to scale in manufacturing, such separating equilibria mean higher costs and therefore a loss of efficiency in production. Therefore the possibility emerges that the introduction of an extended liability regime will negatively affect welfare even if such a regime allows for a better internalization of the costs of an accident. More precisely, Boyd and Ingberman can show that if product prices can be function of a retailer's net worth, then proportional liability is at least as efficient as producer only liability, in spite of the above loss in productive efficiency, a result that does not hold if equilibrium prices cannot be function of a retailer's net worth. As for the joint and several extended liability regime, Boyd and Ingberman show that it is not overall Pareto superior to the producer only liability regime.

The analysis of Boyd and Ingberman is more general than a manufacturer-retailer analysis. They can apply it to many other structures in which liability can be extended to all those who benefit from economic transactions with the generator of risk, including for instance those transactions in which the retailers generate the accident risk. Boyd and Ingberman provide many examples where such extended liability regimes are used. They mention cases where liability imposed on principals for the actions of their agents, on licensors for defective products marketed by licensees, on chemical producers for the improper use or disposal of those chemicals by retailers or end users, and on distributors of defective goods produced by an independent

manufacturer. In each case, the rational is that extended liability can allow more fairness in compensation, a better internalization of the accident costs, and an efficient level of safety activities. By making the market relationships endogenous and sensitive to the liability regime, Boyd and Ingberman can compare the extended liability benefits of greater cost internalization and safety with its costs as market distortions. They first show that under the producer only liability regime, the choice of capacity investment and safety investment is inefficiently low if the potential liabilities exceed the firm's assets when capacity investment is optimal, that is, chosen by equating its private marginal benefit with the opportunity cost of capital, assumed to be a given constant for all firms. The basic factor behind this result is that the marginal cost of capital to the individual firm is given by the opportunity cost of capital plus the probability of bankruptcy: the private marginal cost of capital is higher than its social cost if the probability of bankruptcy is positive, that is, when the expected liability loss from an accident exceeds the firm's assets when capacity investment is optimal. Therefore, investment is smaller than if only the opportunity cost of capital was considered. A lower level of capacity investment reduces the incentives for care and therefore leads to an inefficiently low level of safety investment. When extended liability is introduced in a context where all retailers have similar net worth, the authors show that the larger asset pool available, combining the producer's assets with all its retailers, to compensate victims if an accident occurs implies that in equilibrium, the retailers will demand that the producer increases its capacity investment, and therefore its safety investment, toward the first best levels. Not only is there a transfer of liability from the retailers to the producer but the total surplus also increases due to the increased investment in safety. Nevertheless, such need not be the case when retailers are heterogeneous in their net worth.

When the retailers are heterogeneous in their net worth, they will not have the same preferences with respect to the manufacturer's capacity investment and therefore safety activities. Under a proportional liability regime, retailers with higher net worth prefer more to buy from manufacturers with larger capacity investment, and therefore larger safety investment, than retailers with low net worth do. Moreover, under a joint and several liability regime, wealthier retailers prefer to transact with manufacturers who sell only or mainly to wealthy retailers to avoid being liable for the share that low wealth retailers cannot cover in case of an accident. In both cases, wealthier retailers will be ready to pay a premium for avoiding the risk of being found liable as compared to low wealth retailers. These forces lead to a separating equilibrium: too many manufacturers will operate and potential economies of scale will be lost. So a trade-off

between efficiency, obtained by exploiting the economies of scale[15], and fairness, obtained by insuring that all victims are properly compensated.

One can summarize the results of Boyd and Ingberman as follows. If economies of scale are very large, they will favor a pooling equilibrium, that is one manufacturer selling to all retailers, large or small, whatever the liability regime. Then, the joint and several liability regime leads to greater welfare than the proportional liability regime that in turn leads to greater welfare than the producer only liability regime: this follows from the fact that capacity investment is higher and therefore safety activities too. If economies of scale are very small, no pooling equilibrium exists and welfare is similar under both regimes of extended liability, both being welfare improving compared with the producer only liability regime. This follows from the fact that if economies of scale are small, the same separating equilibrium emerges under both the proportional extended liability regime and the joint and several liability regime and since the proportional liability regime dominates the producer only liability regime: more capacity and therefore more safety investments. If economies of scale at neither very large nor very small, one may observe a separating equilibrium under the joint and several liability regime, because wealthier retailers prefer to do business with large deep pocket manufacturer who sell only to wealthy retailers in spite of the loss of efficiency, and a pooling under the proportional liability regime because then the loss of efficiency is larger even for well-off retailers than the cost in terms of expected compensation which they have to support, which is lower than under the joint and several liability regime.

5. CONCLUSION

The legal developments present on the environmental protection agenda of most governments call for a regime of extended liability both to overcome the negative incentive effect of limited liability laws on the probability of accidents and to improve the compensation of indirect victims of environment damaging accidents. However, an extended liability regime falling on lenders has impacts on the structure of lending contracts, on the working of financial markets, on the availability of credit, on the cost of capital and on the level of investments. It is important that the analysis of policies

[15] Boyd and Ingberman assume that all markets are competitive. This may be a contradiction with the assumption of important economies of scale which are likely to lead to a manufacturing monopoly - the authors expressly mention that, in terms of productive efficiency, a manufacturing monopoly would be best - or at least oligopoly. If that is the case, the separating equilibrium could actually be a source of increased welfare by reducing the market power of the manufacturers.

intended to promote the protection of the environment and the adequate compensation of victims take into account the impact of these policies on the economy as a whole and in particular on the functioning of basic institutions such as financial markets. Very important to this analysis is the specific structure of information available that not only characterizes the different agents involved but also determines the nature and extent of their business relationships. Lenders suffer from different forms of incomplete information in their relationships with their client firms. This incomplete information nature of financial contracts and transactions alter the behavior of the lenders and the firms. A thorough discussion of the impacts on the economy of extending liability to lenders with respect to environment damaging accidents requires that these information structures be accounted for rigorously even if these analyzes are complex and difficult.

Figure 1

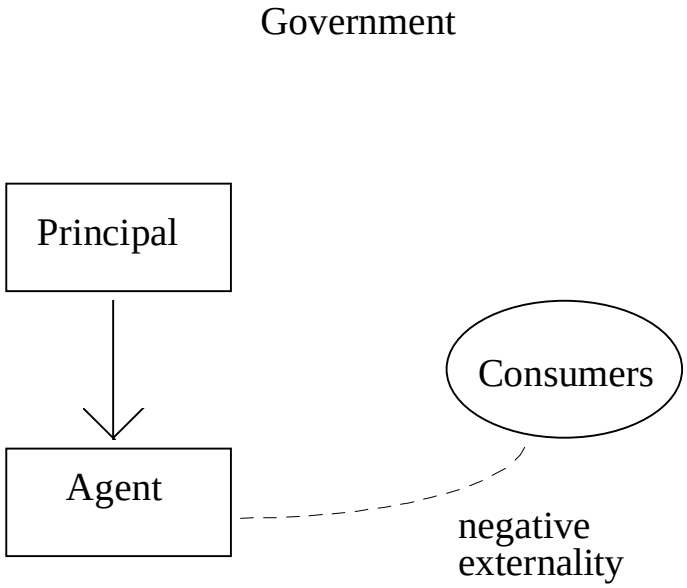
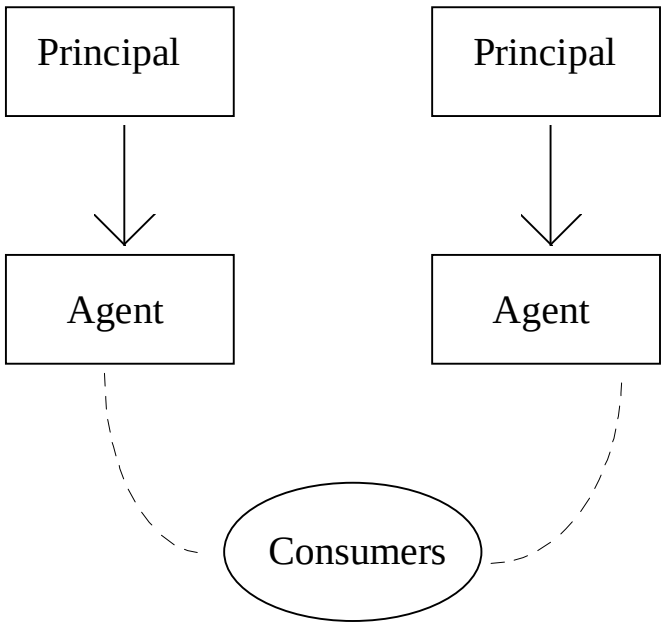

Government
Principal
Consumers
Agent
negative
externality

Figure 2



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